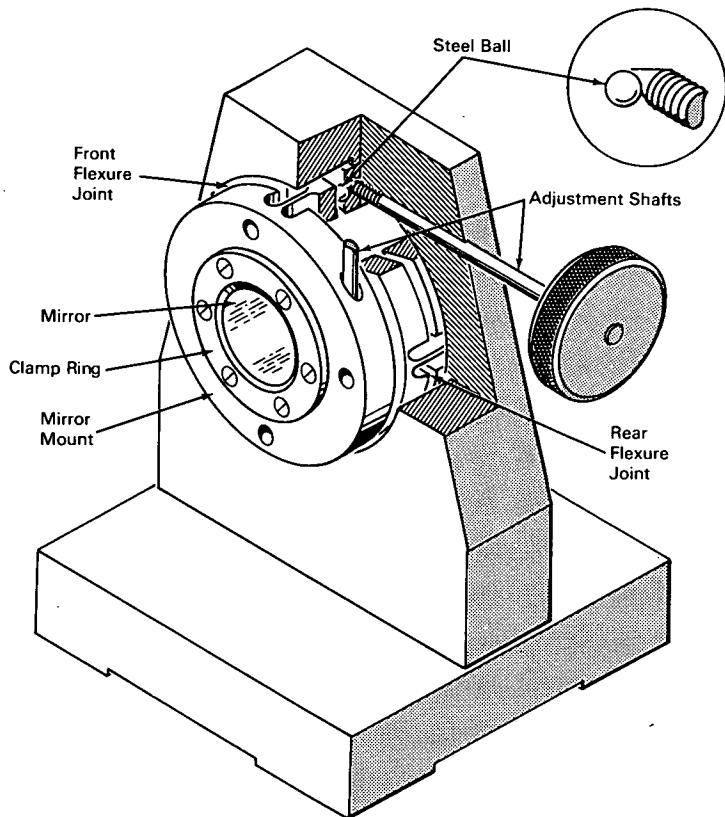


NASA TECH BRIEF



NASA Tech Briefs are issued to summarize specific innovations derived from the U. S. space program and to encourage their commercial application. Copies are available to the public from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151.

Mount Enables Precision Adjustment of Optical-Instrumentation Mirror



The problem:

To design a mirror mount assembly that will allow the plane of a mirror to be adjusted through small angles about two orthogonal axes. The device must allow independent precise adjustment of the mirror with respect to each axis.

The solution:

An assembly incorporating a mirror mount with two independently adjustable flexure joints.

How it's done:

The mirror mount consists of three disk sections with two independent flexure joints. The mirror is positioned in the mount between an O-ring and a clamp ring. Two steel balls and two threaded tapered-nose shafts are used to adjust the plane of the mirror. One shaft is used for vertical alignment and the other for horizontal alignment. The tapered noses of the adjustment shafts bear against the steel balls,

(continued overleaf)

which in turn bear against the flexible middle element of the mount assembly. To adjust the plane of the mirror with respect to either axis, the appropriate threaded shaft is advanced to force the steel ball against the flexible element which pivots at the flexure joint through the required angle.

Notes:

1. This compact device, designed for use with optical instruments, has sufficient stiffness for stable alignment of the mirror and eliminates backlash.
2. Inquiries concerning this innovation may be directed to:

Technology Utilization Officer
Manned Spacecraft Center
Houston, Texas, 77058
Reference: B66-10199

Patent status:

No patent action is contemplated by NASA.

Source: Massachusetts Institute of Technology
under contract to
Manned Spacecraft Center
(MSC-184)